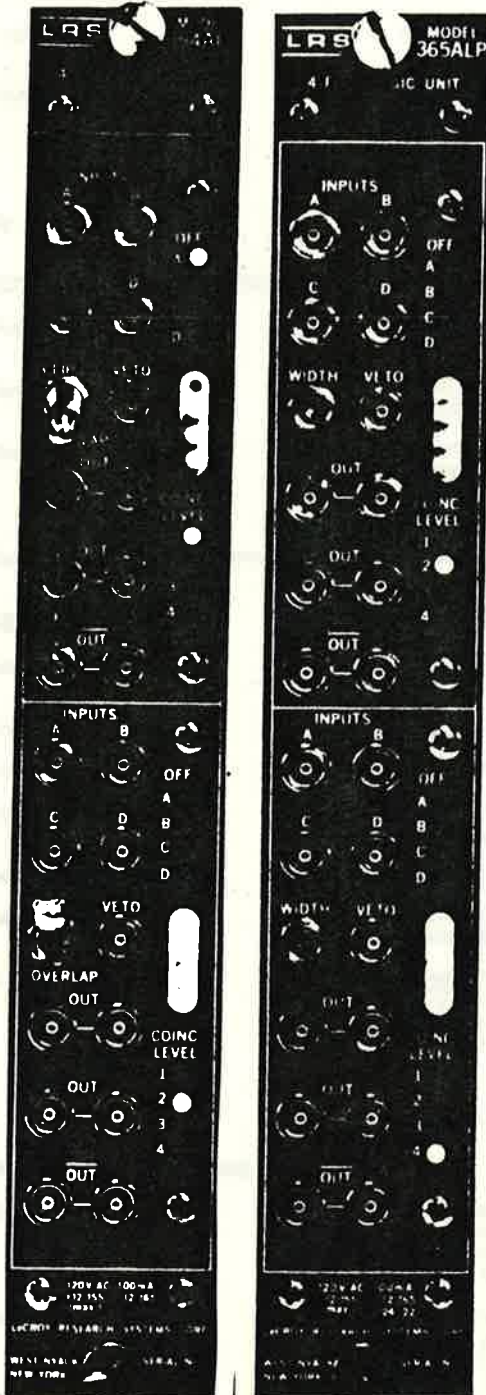


26 JAN. 1981

TECHNICAL DATA

LeCroy



NIM Models 364ALP and 365ALP

Dual 4-Fold Remotely Programmable Majority Logic Units With Veto

The Models 364ALP and 365ALP Dual 4-Fold Logic Units have been designed in response to an increasing demand for complete computer control of high energy physics experimentation. With input on/off control and majority level control determined by either front-panel programming pins or by CAMAC output register-compatible inverse TTL-levels applied to a rear multipin connector, these logic units offer a flexibility previously unavailable in commercially manufactured fast logic circuits.

Both coincidence units offer four fast logic (negative NIM-level) inputs, and three pairs of bridged, -32 mA differential stage current source outputs (2 pairs normal, 1 pair complementary). Each input has a corresponding "on" or "off" programming option, which eliminates the need for removing cables to change logic configurations. The unprogrammed coincidence level (majority level) is set at "1", and the other levels of 2, 3, or 4 may be selected manually via the front panel or remotely via the rear multipin connector.

The output width of the 365ALP is determined by a front-panel, screwdriver-adjustable potentiometer, and is variable from < 4 ns to > 50 ns. The veto input of the 365ALP requires a 3 ns minimum pulse which must overlap the leading edge of the input pulse that would otherwise create the coincidence condition. The veto pulse must precede the actual input signal leading edge by approximately 3 ns.

On the 364ALP, the output width is either of a fixed 4 ns duration, for inputs > 5 ns, or switch-selectably of a duration equal to the coincidence overlap time of the inputs satisfying the preset majority level condition. The veto input of the 364ALP requires a complete overlap of the coincidence in order to inhibit the "overlap" outputs, and requires a 3 ns minimum prompt overlap of the leading edge of the input pulse causing the coincidence condition in order to inhibit the "fixed" outputs.

The 364ALP and 365ALP operate reliably at rates in excess of 150 MHz, with typical units averaging 180 MHz operation. Coincidence width capability is 1 ns minimum. Both units are packaged in #1 width standard AEC/NIM modules and utilize Lemo-type front panel connectors.

December, 1975

WARNING!

For Remote Control, remove all programming pins!

SPECIFICATIONS

NIM Models 364ALP and 365ALP

DUAL 4-FOLD REMOTELY PROGRAMMABLE MAJORITY LOGIC UNITS, WITH VETO

INPUT CHARACTERISTICS

Logic Inputs: 4, Lemo-type connectors; 50 Ω impedance. NIM-level input requirements (> -600 mV); reflections $< 7\%$ for signals of 2 ns risetime.

Veto Input: 50 Ω impedance; NIM-level input requirements (> -600 mV). Model 365ALP requires 3 ns minimum width overlapping leading edge of the input signal that would otherwise create the coincidence condition; should precede signal by 3 ns. Model 364ALP requires 3 ns minimum prompt leading edge overlap in "fixed width" position; complete overlap of input coincidence in "overlap" position.

Bin Gate: Via rear connector; clamp to ground from +4 volts inhibits; risetimes and falltimes < 50 ns.

OUTPUT CHARACTERISTICS

Outputs: Three bridged pairs; (two negative quiescently 0 mA, -32 mA during output), one complementary (quiescently -32 mA, 0 mA during output).

Fan-Out: 6 fold, if each output drives two 50 Ω loads. (Any used output pair should drive 25 Ω for proper amplitude and shape).

Duration: Model 364ALP: switch-selected to be either fixed 3.8 ± 0.3 ns with inputs > 5 ns or equal to time overlap. Non-updating.
Model 365ALP: continuously adjustable from less than 4 ns to greater than 50 ns by means of front-panel screwdriver-adjustable potentiometer. Updating.

Output Risetimes and Falltimes: 1.2 ns typical 10% to 90%. (Falltime of 365ALP is slightly longer except at minimum width).

GENERAL

Functions: AND; OR; Majority Logic; Leading Edge Inhibit; Complement; Pulse standardization without multiple-pulsing; coincidence level determined by front-panel selector.

Coincidence Width: 1 ns up, determined by input pulse durations.

Rate: Clean, reliable operation at 150 MHz; typical maximum rate, 180 MHz.

Input-Output Delay: Model 364ALP: Approximately 6 ns;
Model 365ALP: Approximately 10 ns.

Double-Pulse Resolution: Typical 5 ns, (6.5 ns for triple pulses).

Packaging: AEC/NIM standard #1 width module (AEC Report TID-20893); Lemo-type connectors used for all inputs and outputs.

CURRENT REQUIREMENTS:

Model 364ALP	Model 365ALP
+6 V at 145 mA	+6 V at 144 mA
+12 V at 55 mA*	+12 V at 55 mA*
-12 V at 145 mA	-12 V at 160 mA
115 VAC at 70 mA	-24 V at 22 mA
	115 VAC at 30 mA

*Increases to 120 mA if both channels in 4-fold coincidence.

PROGRAMMING OPTIONS

Manual: Front panel "on/off" programming pins permit each input to be separately enabled or disabled without removing input cables; front-panel "majority level" selector pins permit manual setting of coincidence level from 1 to 4. With no grounding pins engaged, a coincidence level of "1", corresponding to a logical "OR" of the connected inputs, is automatically selected.

Remote: Rear-panel 20-pin connector (AMP 201356-1, with female sockets) permits "majority level" and "on/off" programming by application of TTL levels to appropriate connector pins as indicated below (0 volts at 1 \leq 2 mA = input disabled, or level selected; ≥ 3 volts at 1 = 0 mA = input enabled or level not selected (input current = 0 mA); front-panel manual programming pins must be removed or in storage location when under remote control.

Function	Connector Pin Number		CAMAC Bit
	Channel 1	Channel 2	
A Input	A	C	w 1
B Input	D	F	w 2
C Input	H	K	w 3
D Input	L	N	w 4
2 Level	P	S	} w5, w6 binary coded
3 Level	T	V	
4 Level	W	X	

Mating Connector Type:

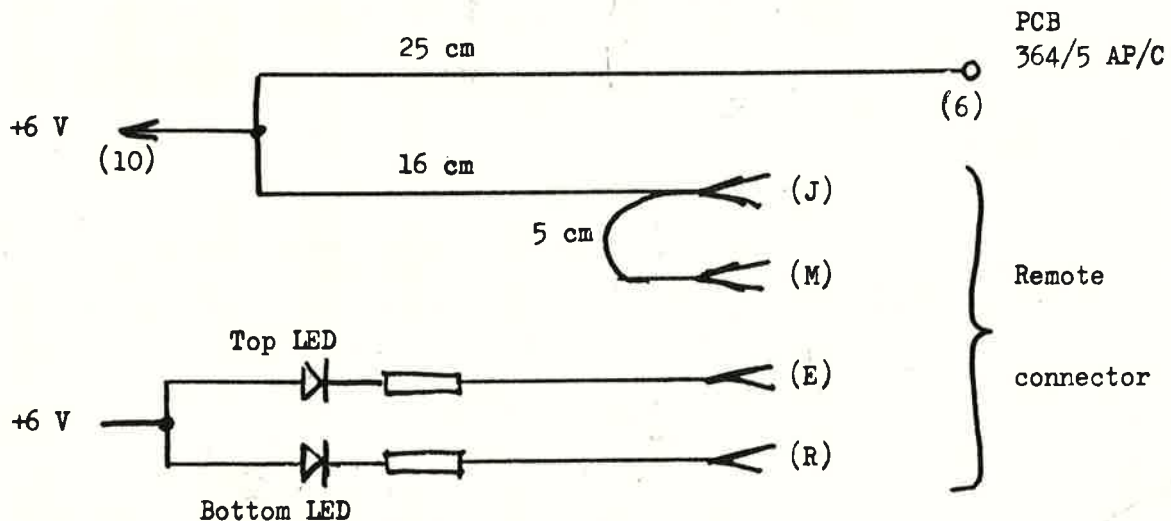
42 *Programmer through software compatible with SEM 292 (as driven by SEM CM 2083)*

LRS Model CK-20 Connector Kit, or AMP 200346-2, with male pins.

IPNL 292A (LRS 365 ALP Remote Control), fully

Wiring modifications to LRS 365ALP, for Remote control by System 292

- Remove the orange wire (+6 V) from NIM power supply connector (pin 10) to remote control PCB.
- Remove 2 wires from 20-poles Remote connector (pins E and R) to remote control PCB.
- Add 2 small LEDs on front panel.
- Replace removed wires by the new wiring:



The parity outputs, normally connected to pins E and R of the remote connector, have thus been replaced by the connections for the LEDs.